WATER USE IN THE APALACHICOLA-CHATTAHOOCHEE-FLINT RIVERS BASIN, 1985

Richard L. Marella

AUTHOR: U. S. Geological Survey, 227 N. Bronough Street, Suite 3015, Tallahassee, Florida 32301.
REFERENCE: Proceedings of the 1991 Georgia Water Resources Conference, held March 19 and 20, 1991, at The University of Georgia, Kathryn J. Hatcher, Editor, Institute of Natural Resources, The University of Georgia, Athens, Georgia.

ABSTRACT

The Apalachicola-Chattahoochee-Flint Rivers basin covers approximately 19,600 square miles, and drains a part of Alabama, Florida, and Georgia. The basin stretches from its headwaters, north of Lake Sidney Lanier in north Georgia, to Apalachicola Bay in Florida, where it discharges into the Gulf of Mexico. The rivers are used for supplying drinking water to several cities, navigation for barge traffic, recreational boating and fishing and power generation. Seasonal flooding of these rivers sustains the flood-plain ecosystems along their channels and provides the freshwater needed to maintain a healthy seafood industry in Apalachicola Bay. Most of the drainage area and population in the Apalachicola-Chattahoochee-Flint Rivers basin lies within Georgia. Georgia accounts for 73.5 percent of the land area in the basin, followed by Alabama with 14.3 percent and Florida with 12.2 percent. In 1985, Georgia accounted for 89.7 percent of the population in the basins, Alabama accounted for 7.9 percent, and Florida accounted for 2.4 percent.

Because the use of water in the Apalachicola-Chattahoochee-Flint Rivers basins is so diverse, it is important to identify the quantity of water used, location of use, and type of user for planning purposes. Total offstream freshwater-use (water diverted or withdrawn) within the Apalachicola-Chattahoochee-Flint Rivers basin in 1985 amounted to 2,157 million gallons per day (table 1), of which approximately 20 percent or 438 million gallons per day was consumed (water evaporated, transpired, incorporated in products or crops or consumed by humans or livestock). Of the total freshwater-use, 86 percent was surface water, and 14 percent was ground water. Nearly 66.5 percent of the surface water used in this basin in 1985 was for thermoelectric power generation, 16.9 percent was used for public supply, 12.1 percent for self-supplied commercial and industrial use, and 4.5 percent for agricultural irrigation. Of the ground water used in this basin, 62.1 percent was used for agricultural irrigation, 17.8 percent for public supply, 12.2 percent for self-supplied domestic use, 7.7 percent for self-supplied commercial and industrial use, and 0.2 percent for thermoelectric power generation. Georgia accounted for 82 percent of the surface water used and 86 percent of the ground water used in the Apalachicola-Chattahoochee-Flint Rivers basin in 1985. The only instream water-use (water use taking place within the stream channel) measured in 1985 was for hydroelectric power generation, which used 29,825 million gallons per day.

TABLE 1. Water-use in the Apalachicola-Chattahoochee-Flint Rivers basin by State for 1985.

[Figures may not add to totals because of independent rounding.]

State	Total freshwater-use, in million gallons per day					
	Public Supply	Domestic Self-Supply	Ind./Com. Self-Supply	Agricultural Irrigation	Thermoelectric Self-Supply	Totals
Alabama	19	3	52	16	117	207
Florida	4	6	34	23	102	169
Georgia	344	28	162	233	1,015	1,781
Totals	367	37	248	272	1,233	2,157

REFERENCES

Baker, R.M., and Mooty, W.S. 1987. Use of water in Alabama, 1985. Geological Survey of Alabama Information Series 59D. Tuscaloosa, Ala. 51 p.

Bielby, Camille. 1987. 1985 Annual water use survey. Northwest Florida Water Management District Program Development Series 87-1. Havana, Fla. 107 p.

Marella, R.L. 1988. Water withdrawals, use and trends in Florida, 1985. U.S. Geological Survey Water-Resources Investigations Report 88-4103. 43 p.

----- 1990. Florida water supply and use, *in* the National water summary 1987--Hydrologic events and water supply and use. U.S. Geological Survey Water-Supply Paper 2350. pp. 207-214.

Mooty, W.S. 1990. Alabama water supply and use, *in* the National water summary 1987--Hydrologic events and water supply and use. U.S. Geological Survey Water-Supply Paper 2350. pp. 141-148.

Pierce, R.R. 1990. Georgia water supply and use, *in* the National water summary 1987--Hydrologic events and water supply and use. U.S. Geological Survey Water-Supply Paper 2350. pp. 215-222.

Turlington, M.C., Fanning, J.L., and Doonan, G.A. 1987. Water use in Georgia by county for 1985. Georgia Geological Survey Information Circular 81. 109 p.

United States Army Corps of Engineers. 1984. 1984 Water Assessment for the Apalachicola-Chattahoochee-Flint River Basin (Main Report). United States Army Corps of Engineers Executive Summary. Mobile, Ala. Vol. 1, 88 p.